

REMARKS

Claims 1, 2, 5, 6, 8-36 and 43-51 are pending in this application. By this Amendment, claims 1, 5, 6, 8, 9, 11, 13 and 43 are amended. The amendments introduce no new matter. Claims 3, 4, 7, and 37-42 are canceled without prejudice to, or disclaimer of, the subject matter recited in those claims. Reconsideration of the application based on the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies shown Applicants' representative by Examiners Garcia and Feggins during the April 6, 2006 personal interview. Applicants' separate record of a summary of the substance of the personal interview is contained in the following remarks.

The Office Action, in paragraph 1, indicates that the Information Disclosure Statement filed on November 26, 2003 fails to comply with the provisions of 37 C.F.R. §1.97 and 1.98 and MPEP §609 in that an attorney docket number and unpublished U.S. application numbers are listed in the "U.S. Patent Documents" section. It is noted, however, that the documents listed in the Information Disclosure Statement have been otherwise considered by the Examiner, and are indicated on the Form PTO-892 attached to the Office Action. Applicants, therefore, understand that no further action is required to ensure consideration of the listed references.

The Office Action, in paragraphs 2 and 3, makes final the Restriction Requirement. As such, claims 37-42 are indicated as being withdrawn from consideration as drawn to a non-elected group of claims. Claims 37-42 are canceled.

The Office Action, in paragraph 12, indicates that claim 49 recites allowable subject matter. Specifically, the Office Action indicates that claim 49 would be allowable if rewritten in an independent form to include all the features of the base claim and any intervening claims. Applicants appreciate this indication of allowability of the subject matter of claim 49

but respectfully submit that at least claim 43, from which claim 48 depends, is allowable for the reasons indicated below.

The Office Action, in paragraph 5, rejects claims 1-3, 15, 16, 28, 43-45 and 51 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,059,046 to Tanuma et al. (hereinafter "Tanuma") in view of U.S. Patent No. 5,880,754 to Niikura et al. (hereinafter "Niikura"). The Office Action, in paragraph 6, rejects claims 4, 5, 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Tanuma as modified by Niikura as applied to claim 1 above, and further in view of U.S. Patent No. 6,305,786 to Plotkin et al. (hereinafter "Plotkin"). The Office Action, in paragraph 7, rejects claims 6 and 19 under 35 U.S.C. §103(a) as being unpatentable over Tanuma as modified by Niikura and Plotkin as applied to claim 4 above, and further in view of what is apparently U.S. Patent No. 5,216,446 to Satoi et al. (hereinafter "Satoi"). (Note: Applicants are unclear regarding the substance of this rejection, in that Satoi is not referenced at all in the ensuing discussion, but rather U.S. Patent Application Publication No. US 2003/0197767 to Dudenhoefer et al. (hereinafter "Dudenhoefer") is discussed). The Office Action, in paragraph 8, rejects claims 7-11, 13, 14, 20-24, 26 and 27 under 35 U.S.C. §103(a) as being unpatentable over Tanuma as modified by Niikura and further in view of U.S. Patent Application Publication No. US 2005/0109766 to Miller et al. (hereinafter "Miller"); and separately in paragraph 9, rejects claims 7, 11, 12, 20, 24 and 25 under 35 U.S.C. §103(a) as being unpatentable over Tanuma as modified by Niikura as applied to claim 1, and further in view of Miller. (Note: These separate rejections of the pending claims over the same combination of applied prior art references are at least confusing.) The Office Action, in paragraphs 10 and 11, rejects claims 29-36, 46-48 and 50 under 35 U.S.C. §103(a) as being unpatentable over Tanuma as modified by Niikura, and further in view of JP-A-06-024097 (hereinafter "JP' 097"), or JP' 097 and further in view of

U.S. Patent No. 6,343,848 to Berg et al. (hereinafter "Berg"). These rejections are respectfully traversed.

Independent claims 1 and 43 are amended to incorporate the subject matter previously recited in now-canceled claims 3, 4 and 7. As such, Applicants' arguments traversing the prior art rejections of the Office Action principally consider the rejections enumerated in paragraphs 8 and 9 of the Office Action over the combination of Tanuma, Niikura and Miller.

Tanuma teaches a printer carriage assembly having thermal dissipating means in which a printing head drive circuit of a printer is mounted on a side of a carriage allowing said carriage to act as a heat sink (Abstract). In Tanuma, an aluminum die casting carriage frame is provided, including a printing head, having affixed thereto an iron plate, the iron plate acting as a radiating plate for the printing head drive elements, the iron plate and the aluminum die casting carriage frame considered to have an extensive radiating effect (col. 3, lines 2-35). Such an iron plate, although Tanuma describes it as not being a heat sink, would, however, add additional weight, size, cost and/or energy usage to the print head. These shortfalls, as discussed in paragraph [0005] of Applicants' disclosure, are among the shortfalls that the subject matter of the pending claims seeks to overcome.

Niikura teaches an inkjet recording apparatus for recording on a recording medium using an inkjet recording head that records by discharging ink from ink discharge ports thereof (Abstract). Niikura teaches a means by which a temperature sensed by a thermister reaches above a certain temperature, the temperature is lowered by "making a halt for a fixed time to prevent the breakage of the recording head, and further when a one-rank higher temperature is attained due to exhaustion of the ink, the control is made so that the recording operation is stopped compulsorily by a judgment of abnormality" (col. 6, lines 40-48). As such, Niikura teaches another of the disadvantageous prior art techniques for limiting temperature in thermal printing components as discussed in paragraph [0002] of Applicants'

disclosure, i.e., "[o]nce the temperature limit is exceeded, a slow down or cool down period is normally used to maintain ejection quality." Again, Niikura positively discloses a shortfall in the prior art that Applicants recognized and that it is an objective of the subject matter of the pending claims to overcome.

These disclosures alone may be considered enough to suggest that Tanuma and Niikura are not combinable in the manner suggested by the Office Action simply because they both refer to printer components. These inventions both include recognized shortfalls in the prior art, a combination of which one of ordinary skill in the art would not have made to render obvious the subject matter of the pending claims. In one case, a heavier-than-necessary-weight thermally-conductive carriage is employed in an attempt to dissipate heat, and in another case, a slow down or cool down period is employed to dissipate heat. Both of these methods for dissipating heat were recognized by Applicants as shortfalls in the prior art.

Additionally, because Niikura requires such a slow down and/or cool down period and further because in the portion of Niikura cited by the Office Action, i.e., col. 7, lines 32-40 Niikura discloses a block 68 which is a heat sink member attached to the carriage 60, it is not reasonable to conclude that the Niikura device can be considered to teach a thermally conductive fluid ejector carriage and at least one thermally-conductive interface structure between the thermally-conductive fluid ejector carriage and a structure upon which the thermally-conductive carriage translates that provides a heat flow path from the thermally-conductive fluid ejector carriage into the at least one thermally-conductive interface structure, wherein the at least one thermally-conductive interface structure comprises at least one thermally-conductive material including at least one polymer material and at least one thermally-conductive material, as is positively recited in the subject matter of the pending claims.

MPEP §2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." MPEP §2143.01 further instructs that "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'" *See also In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicant respectfully submits that the rejection of at least independent claims 1 and 43 is improper in view of at least MPEP §2143.01 because the Office Action lacks the required specific objective evidence of a teaching, suggestion or motivation in the prior art for one of ordinary skill to combine the references in the manner suggested by the Office Action.

Additionally, MPEP §2141.02 states, "[a]scertaining the differences between the prior art and the claims at issue requires interpreting the claim language, and considering both the invention and the prior art reference as a whole." Further, "[i]n determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). Given the above disclosures, as supplemented by the discussion below, it is unreasonable to conclude that the standard set forth above is met in the asserted combination of references. Tanuma and Niikura teach shortfalls in the prior art, a combination of which shortfalls one of ordinary skill in the art cannot reasonably be considered to have been willing to make, and a combination of shortfalls that cannot reasonably be considered to render obvious the subject matter of the pending claims

Miller teaches a method for making a thermoplastic thermally-conductive interface article (Abstract). Miller teaches that thermally-conductive interface articles may be fashioned by injecting molding a thermoplastic composition into molding members to form

the article, the thermoplastic composition comprising a combination of a thermoplastic elastomer matrix and a thermally-conductive filler material. There is nothing however in Miller to suggest specifically fashioning print carriage and/or print carriage cartridge components from such compositions and more specifically a thermally-conductive interface structure between a thermally-conductive fluid ejector carriage and at least one structure upon which the thermally-conductive fluid ejector carriage translates, as is positively recited in the subject matter of the pending claims. In fact, using thermally-conductive polymer materials comprising at least one polymer material and at least one thermally-conductive material to fashion such components is precisely the solution that Applicants achieved. For at least this reason, any attempt to combine Tanuma, Niikura and/or Miller in the manner suggested by the Office Action can only be arrived at through application of improper hindsight reasoning based on Applicants' disclosure.

Claim 1 recites, among other features, the list of features enumerated above. In like manner claim 43 recites, among other features, transferring heat from the thermally-conductive fluid ejector carriage device to at least one thermally-conductive interface structure between the fluid ejector carriage device and a structure upon which the fluid ejector carriage device translates, the at least one thermally-conductive interface structure comprising at least one thermally-conductive material including at least one polymer material and at least one thermally-conductive material.

For at least the reasons indicated above, no permissible combination of the applied prior art references can reasonably be considered to teach, or to have suggested, the subject matter of independent claims 1 and 43, as amended. Additionally, because none of the other varyingly applied prior art references overcome any of the above-identified shortfalls in the application of Tanuma, Niikura and/or Miller to render obvious the subject matter of independent claims 1 and 43, claims 2, 5, 6, 8-36 and 44-51 would also not have been

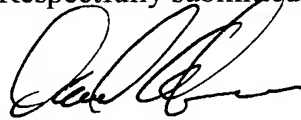
suggested by any combination of the applied prior art references for at least the respective dependence of these claims directly or indirectly on independent claims 1 and 43, as well as for the separately patentable subject matter that each of these claims recites.

Applicants' representative briefly presented the above arguments regarding the combinability of Miller with Tanuma and Niikura in rendering obvious the subject matter of the pending claims to Examiners Garcia and Feggins during the April 6 personal interview. The Examiners indicated that they would further consider Applicants' arguments upon submission of a formal response.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 5, 6, 8-36 and 43-51 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,



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